VeEX™ VePAL MX100e+ Metro Expert is the next generation of field equipment for Carrier Ethernet, Mobile Backhaul, and Core Networks carrying data, voice and video.

**Platform Highlights**

- Intuitive presentation of measurements with test graphics
- High resolution color touch-screenviewable in any lighting conditions; fitted with protective cover
- Robust, handheld chassis packed with powerful and flexible features for demanding environments and test conditions
- Optimized for field engineers or technicians installing and maintaining Ethernet networks enabling Carrier Ethernet, Mobile Backhaul, or Triple Play services
- User defined test profiles and thresholds enable fast, efficient and consistent turn-up of services
- USB memory stick support and FTP upload capability for test result storage and file transfer respectively
- Maintain instrument software, manage test configurations, process measurement results and generate customer test reports using included ReVeal™ PC software
- Extend field testing time using interchangeable LiIon battery pack/s. Greater battery autonomy with extended battery pack
- Test set connectivity via 10/100Base-T management interface, WiFi, Bluetooth, and Data Card for back office applications and workforce management
- Remote control capability through ReVeal™ PC software

**Key Features**

- All-in-one 10/100/1000Base-T, 100Base-FX, 1000Base-X tester
- Full Ethernet testing features on each operating port
- Throughput, latency, frame loss, and back-to-back measurements per industry-standard RFC2544 and V-SAM tests (per ITU-T Y.1564)
- Ethernet BER testing at Layer 1, Layer 2, Layer 3 and Layer 4, with or without VLAN and MPLS tags
- Unframed BER testing to validate error free connections
- Link Partner auto-negotiation advertisement analysis
- Q-in-Q (VLAN stacking) and multiple MPLS tag support
- MAC flooding and VLAN flooding
- IPv4 and IPv6 traffic generation
- Advanced IP testing: Network discovery, HTTP/FTP test, VoIP
- Multiple stream traffic generation and analysis for end-to-end QoS verification of multiple services
- IEEE 802.3ah, ITU-T Y.1731, and IEEE 802.1ag OAM support
- Intelligent device discovery mode; discover other VeEX Ethernet testers or loopback devices on the network for quick and easy loopback control configuration
- Smart Loop mode for Layer 1, Layer 2, Layer 3, and Layer 4
Ethernet Applications

End-to-End Performance Testing
Irrespective of Ethernet service being installed, it is always necessary to verify that the network can carry out and cope with the allocated bandwidth required by the customer. Service Level Agreements (SLA) thus compel service providers to measure network throughput and other performance characteristics to ensure that bandwidth associated with different service types conform to customer expectations.

Network Troubleshooting
Service providers constantly face the hard challenge of troubleshooting poor or unsatisfactory network performance. In these circumstances for example, the service provider must determine whether the poor performance is associated with it’s own or the customer network. Network monitoring tools play an important role in this troubleshooting process.

Mobile Backhaul Testing
Mobile operators confronted with the explosive growth of data-centric services driven by 3G and LTE Smartphone applications, are urgently upgrading and migrating traditional TDM backhaul networks to Ethernet/IP packet-based technologies. The MX100e+ tester equipped with a rich variety of test applications and multiple stream analysis is perfectly equipped to test IP transport over both copper and fiber backhaul connections across the Radio Access Network (RAN).
**Ethernet Features**

**BERT**
Layer 1, 2, 3, and Layer 4 BER testing is supported. The BER test can be configured to use regular PRBS test patterns, stress patterns or user defined test patterns to simulate various conditions. All patterns are encapsulated into an Ethernet frame to verify bit-per-bit performance of circuit under test.

**RFC2544 Compliance Testing**
Performs the RFC2544 automated test suite at all recommended frame sizes including user configurable frame sizes and up to full line rate. The test suite can also be performed with the far end test partner in loopback mode or peer-to-peer mode - the latter allowing for symmetrical/asymmetrical testing. Thresholds may be configured for accurate SLA assurance and verification. The automated tests supported are throughput, latency, frame loss, and back-to-back frames.

**Intelligent Network/Device Discovery**
Easily discover and select another VeEX Ethernet tester or loopback device on the network under test for loopback testing applications. The local device will control the operation of the far end device, in either loopback or peer-to-peer mode (or symmetrical or asymmetrical traffic generation mode). This feature greatly simplifies field testing since there is no need for a second technician to be at the far end configuring the test partner device.

**Multiple Streams Generation - Throughput Test**
Up to eight traffic streams can be independently configured with CoS (VLAN priority) and QoS (TOS/DSCP) prioritization. This traffic feature, simulates multiple service conditions (e.g. Triple Play), and facilitates end-to-end QoS performance verification. The multiple stream throughput test may be performed with a second test unit or intelligent loopback device in Smart Loop or in Peer-to-Peer mode.
Ethernet Features cont’d

Q-in-Q (VLAN stacking)
For Metro and Carrier Ethernet applications, VLAN stacking, also known as Q-in-Q, is supported. This feature makes a provision for carrier/service provider assigned VLANs, but also retains the VLAN of customer traffic.

Smart Loopbacks
Four modes are available for looping back test traffic. At Layer 1, all incoming traffic is looped back unaltered. For Layer 2, all incoming unicast traffic is looped back with the MAC source and destination addresses swapped. For Layer 3, all incoming unicast traffic is looped back with the MAC and IP source and destination addresses swapped, and for Layer 4, all incoming unicast traffic is looped back with the MAC, IP, and UDP/TCP ports swapped.

This feature also supports configurable traffic filter on all MAC, IP, and VLAN fields to allow full control over looped traffic.

Test Port Status
Auto-negotiation is a function that enables Fast Ethernet devices to automatically exchange information over a link about speed and duplex abilities. A common cause of performance issues on 10/100T Ethernet links occurs when one port on the link operates at half-duplex while the other port operates at full-duplex.

The port status feature of the MX100e+ reports the auto-negotiation and link advertisement parameters of both test set and link partner, which helps to reduce many link performance-related support calls.

MPLS Measurements
Multiple Protocol Label Switching (MPLS) is a technology that allows for a more efficient routing of Ethernet/IP packets via the use of MPLS routers in the network. MPLS labels reside between the MAC (Layer 2) and IP layers (Layer 3). Up to three MPLS tags can be configured in the traffic stream with user configurable Label, CoS, and TTL fields.

VLAN Scan and Traffic Monitor
Scan up to 4096 VLAN IDs for switch configuration verification. Verify which VLAN IDs are the top bandwidth users and monitor up to eight live traffic streams (in terminate mode).

Delay and Jitter Measurements
Frame delay and frame delay variation - Jitter measurements are performed on the test traffic during BER tests or throughput tests.
V-SAM Test

VeEX's V-SAM test suite is fully compliant with ITU-T Y.1564 and offers an efficient method to qualify and troubleshoot Ethernet Services. V-SAM addresses some of RFC2544 limitations by testing multiple services at once and providing simultaneous measurements of key SLA parameters.

The purpose of the SAM test suite is to verify that the service is compliant to its Bandwidth Profile and Service Acceptance Criteria. The test is broken down into two phases:

- Phase 1: Service Configuration test. The services running on the same line are tested one by one to verify the correct service profile provisioning.
- Phase 2: Service Performance test. The services running on the same line are tested simultaneously over an extended period of time, to verify network robustness.

This test suite was designed with the end user in mind and allows for quick provisioning, execution and analysis of the test results, even without prior detailed knowledge of the standard:

- Test profiles can be stored and recalled, and even created offline on a PC and loaded on the test set, to facilitate quick setup.
- A visual Pass/Fail banner and summary tables provides a quick overview of the status of all services.
- Color highlighting the failing parameters facilitates a quick understanding of the problem if troubleshooting is required.
**OAM**

To achieve Carrier Class Ethernet, networks need to be managed and monitored by service providers in order to guarantee SLAs, and need to support automated defect detection and performance measurement. Standard bodies have developed protocols to achieve this.

- IEEE 802.3ah OAM for single segment “first mile” link fault management
- IEEE 802.1ag and ITU Y.1731 OAM for transport connectivity fault management
- ITU Y.1731 for end to end service level performance verification

The MX100e+ offers a complete tool set for Link Level (IEEE 802.3ah) and Service Level (IEEE 802.1ag/ITU- Y.1731) OAM for monitoring and maintaining carrier grade Ethernet services.

**Link Fault Management testing** with 802.3ah OAM offers a full set of capabilities including:

- Discovery mechanism to verify capabilities and provisioning of link partner
- Remote Loopback command for link performance testing
- Critical Link Event Notification

**Connectivity Fault Management testing** with 802.1ag and Y.1731, capabilities include:

- Linktrace message to perform path discovery
- Loopback message to test connectivity and isolate faults
- Continuity check messages to detect connectivity issues

**Performance Management testing** with Y.1731, capabilities include:

- Frame Loss Measurement (ETH-LM) function for service frame loss ratio measurement
- Delay Measurement (ETH-DM) function for frame delay and frame delay variation measurement
IP Testing

Internet connection services require that the IP connectivity be verified up to the public network. For a routed network, verifying end-to-end connectivity is also important prior to testing the throughput performance. Triple Play services are IP centric, so IP test functions are no longer considered a luxury. On a daily basis, technicians verify network connections during service installation and restoration, so Ping test, Trace Route, ARP, Web browser, FTP throughput, and VoIP Call emulation have become routine measurements. IP verification for IPv4 networks on the MX100e+ is possible over the 10/100/1000Base-T, 100Base-FX, 1000Base-X test ports, while a subset of these tools is available for IPv6 and the USB WiFi adaptor.

VoIP Testing

Take advantage of the three software options offering different test methods to verify and provision your VoIP network. Testing can be performed over any of the Ethernet test ports.

**VoIP Check** – Simulates a VoIP call to the nearest router and measures the round trip MOS score and related VoIP parameters.

**VoIP Expert** – Generates industry standard wave files to verify MOS and R-Factor values of upstream and downstream paths and includes QoS measurements such as packet jitter, packet loss, and delay. Compatible with all VeEX testers including VX1000 VoIP server software.

**VoIP Call Expert** – Emulates an IP phone and can place and receive calls using SIP or H.323 protocols. Comprehensive Codec support and call destination options verify voice encoding and translation provisioning. Real-time evaluation of subjective voice quality is made possible using the Telchemy test method. Bulk call testing capability allows up to 24 simultaneous calls to be placed.
Net Wiz

Ethernet network installation is simplified using this basic, yet powerful feature. A built-in TDR identifies distance to short, distance to open, wire cross, and other anomalies associated with CAT-5 structured cabling. “Sniff” the network using the one-touch discovery feature. Identify routers, gateways, printers, PCs and other devices connected to the network within seconds.

WiFi Wiz

All VePAL products adopt a USB WiFi adaptor to make 802.11 b/g/n wireless installations a simple task. Scan for available networks or perform signal strength and quality measurements to determine the best location for a new wireless access point. The IP Ping capability ensures the wireless network is properly installed and configured. A full suite of IP testing features is supported.

ReVeal MTX PC Tool

A software package shipped standard with each test set. Test and other installation profiles can be created and edited on a PC for upload to the test set via LAN connection. Test results can be downloaded and saved to a PC, where test data management and report generation can be performed. Users are able to check and upgrade their test sets without having to return the unit to the supplier, thus reducing downtime.
**Ethernet**

**Ethernet Interfaces**
Single 10/100/1000Base-T Port: RJ45 connector
Ethernet Classification: Per IEEE 802.3 compliant

**Optical Interfaces**
Single 1000Base-X/1000Base-FX SFP Port: LC connector
ROHS compliant and Lead Free per Directive 2002/95/EC
Eye Safety: Class 1, per FDA/CDRH, EN (IEC) 60825

**Ethernet Features**
Auto Negotiation , Full and Half Duplex , Flow Control

**Modes of Operation**
Terminate, Monitor, Loopback

**Traffic Generation**
Layer 1 Framed (BERT only), Layer 2, Layer 3, Layer 4
Test Frame Header:
- IEEE 802.3 and Ethernet II (DIX) frames
- Configurable Source and Destination MAC and Ethernet Type
- VLAN stacking up to 3 Q-in-Q tags w/configurable priority & type
- Fully configurable IPv4 or IPv6 header
- MPLS up to 3 labels with configurable Label/S/CoS and TTL fields (optional)
- UDP/TCP header with configurable Source & Destination ports
Frame size 64 to 1518 bytes and jumbo frame up to 10000 bytes
Traffic Pattern (Throughput Test and BERT only): Constant, Ramp, Multi Bursts, Single Burst
Error Injection (Throughput Test and BERT only): Bit, CRC, IP Checksum, TCP/UDP checksum, Pause, Symbol (Layer 1 Unframed)
MAC flooding feature generates test frames with up to 4096 incremental Source and/or Destination MAC addresses (optional single stream Throughput Test feature)
VLAN flooding feature generates test frames with up to 4096 incremental VLAN IDs (optional single stream Throughput Test)

**ITU-T Y.1564 V-SAM Test**
V-SAM test suite compliant with ITU-T Y.1564 standard
Support for Multi-stream traffic generation, Service Configuration and Service Performance tests
Independently configurable for each stream: Bandwidth profile parameters (CIR, EIR, Traffic Policing, Color Mode) and Service Acceptance criteria (FLR, FTD, IFDV, AVAIL)
Simple summary Pass/Fail results tables and drill down capability with detailed measurements (Frame Loss, Frame Transfer Delay, Frame Delay Variation, Availability) for each service

**Link Level OAM - IEEE 802.3ah**
Modes: Active and Passive, with configurable Vendor OUI, Vendor SPI, MAX PDU length, and PDU rate
Discovery capabilities: remote loopback, link events, MIB retrieval
Link Events Notifications: Link Fault, Critical Event, Dying Gasp

**Service Level OAM - IEEE 802.1ag and ITU-T Y.1731**
M EP emulation with configurable MD name, MA name, local MEP ID, MD level, VLAN ID
Continuity Check Message (CCM): with priority level & interval selection
Loopback Messages (LBM/LBR): loopback message generation and response to destination MEP or MAC address
Link Trace Messages (LTM/LTR): link trace message generation and response to destination MEP or MA address with configurable TTL
Loss Measurement Messages (LMM/LMR): loss measurement message generation and response to destination MEP or MAC with configurable rate and number of messages

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<th>SFP</th>
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*Data rates, performance, and supported transmission protocols are only guaranteed for SFPs and XFPs supplied by VeEX Inc. If selecting or using other vendors, users should exercise caution.*

Delay Measurement Messages (DMM/DMR): delay measurement message generation and response to destination MEP or MAC with configurable rate and number of messages

**RFC2544 Compliance Testing**
Automated tests compliant with RFC2544 with configurable threshold values and maximum transmit bandwidth settings
Throughput, Latency, Frame Loss, and Back-to-Back (burst) tests
Frame sizes: 64, 128, 256, 512, 1024, 1280, and 1518 bytes including 2 user configurable frames
Test can be done to a remote loopback or to a remote test set with remote control of traffic generation and measurements at each end (requires asymmetric test option)

**Bit Error Rate Testing**
Single Stream test with test pattern: PRBS 2E15 -1, PRBS 2E23 -1, PRBS 2E15 -1, Normal and inverted patterns, All 0s, All 1s and User Defined
Layer 1 Framed: CRPAT, CSPAT, CRTPAT
Layer 1 Unframed: HPAT, LFPAT, MFPAT, RD PAT, JTPAT, SN PAT

**Traffic Filters**
Up to eight traffic filters can be configured with MAC, VLAN, and IP fields for Monitor and Loopback modes

**Multiple Streams Throughput Testing**
Up to eight independent traffic streams generation and analysis, with configurable filters
Each stream can be set with independent frame size, bandwidth, traffic profile, and QoS levels

**Smart Loopback Mode**
Layer 1: loops back all incoming traffic
Layer 2: all incoming traffic is looped back with MAC source and destination addresses swapped
Layer 3: all incoming traffic is looped back with MAC and IP source and destination addresses swapped
Layer 4: all incoming traffic is looped back with MAC, IP, and UDP/TCP ports swapped
Loopback traffic filters with all MAC/VLAN/IP/UDP parameters configurable
Key Measurements
Error Measurements: Bit (BERT and single stream Throughput Test), BER (BERT and single stream Throughput Test), CRC, symbol, IP checksum, TCP/UDP checksum, jabber frames, runt frames, Frame loss (count and %), OSS
Alarm Detection: LOS, pattern loss, service disruption
Frame/Packet Statistics: Multicast, broadcast, unicast, pause frames, frame size distribution
Rates (min, max, average and current): frame rate, bandwidth utilization, frame rate, line rate, data rate
Delay (min, max, average and current): round trip delay, inter frame gap, jitter

VLAN Scan and Monitor
Scans incoming traffic and discovers all VLAN flows including Q-in-Q tagging
Key statistics on traffic rates, alarms and errors are reported for monitored streams (up to 8)

ReVeal MTX PC Software
Remote Control (optional)
Remote screen capture and movie capture
Remote Software management: software upgrade, software option management
Test results management
Advanced report generation with .pdf or .csv formats, combine test results, add logos and comments
Test profiles management online or offline test profile creation, upload and download

Additional Test Features
Profiles: Save and recall test profiles
Screen capture: Screen shots in .bmp format via ReVeal MTX PC software
Remote control: via ReVeal MTX PC software
Results saving: 1000 results
Export test results via USB, FTP, or ReVeal MTX PC software

General Specifications
Size: 210 x 100 x 55 mm (H x W x D)
8.25 x 3.75 x 2.25 in
Weight: Less than 1 kg (less than 2.2 lb)
Battery: LiIon smart battery: 2800 mAh, 10.8VDC
Extended battery: 5600 mAh, 10.8 VDC
AC Adaptor: Input: 100-240 VAC, 50-60 Hz
Output: 15VDC, 3.5A
Operating Temperature: -10°C to 45°C (14°F to 113°F)
Storage Temperature: -20°C to 70°C (-4°F to 158°F)
Humidity: 5% to 95% non-condensing
Display: 3.5” QVGA 320x240 full color touch-screen
Ruggedness: Survives 1.5 m (5 ft) drop to concrete on all sides
Interfaces: USB 2.0, RJ45, 10/100-T Ethernet, Bluetooth 2.0 (optional)
Languages: Multiple languages supported

Options
IP Testing
Ping, Trace Route, ARP, FTP/Web tests, Web-browser. These tests are done via the chassis 10/100/1000Base-T, 100-FX, and 1000Base-X ports.

VoIP Testing
Codecs: G.711 µ-law, G.711 A-law, G.723.1 (optional), G.729 (optional)
Measurements: MOS (CQ and LQ) and ITU-T G.107 R-factor (CQ and LQ)
Packet Statistics: data throughput rate, packet loss, packet discard, OOS, duplicate, jitter

VoIP Check
• Simulates VoIP call to the nearest router by sending ICMP traffic with payload/rate mimicking VoIP traffic

VoIP Expert
• Client/Server mode provides bi-directional measurements
• Compatible with any VeEX field tester or centralized VeEX VX1000 Server software

VoIP Call Expert
• VoIP call setup: supports SIP and H.323 protocols
• Configurable jitter buffer (fixed or dynamic)
• Incoming call Auto Answer
• STUN support
• Talk/Listen with USB headset
• DTMF test (RFC4733)
• Signaling trace with protocol decode
• Up to 24 simultaneous calls

Net Wiz
Available on 10/100/1000Base-T test port
Detect distance to open/short, wire cross, impedance mismatch
Network device discovery; Auto Ping verification
TDR accuracy: ± 3 meters

WiFi Wiz
USB Wi-Fi adapter 802.11b, 802.11g, 802.11n
Access Points scan signal level and link quality measurement
WEP/WPA1/WPA2 encryption
IP Connectivity test (Ping, trace route, Web/FTP test, Web browser, VoIP) (requires additional options)

VePAL Discovery Function and Remote Control
Discovery function to all VeEX VePAL devices within subnet or manual control of VeEX VePAL devices in routed network
Remote Control of Loopback capability
Remote Control of Asymmetric test capability for end to end RFC2544 test (optional)
Ordering Information

Z03-00-010P VePAL MX100e+, Handheld Ethernet Test Set

Ethernet Software Options

499-05-014 MPLS Tags
499-05-015 Jitter Measurements
499-05-058 MAC Flooding
499-05-059 Asymmetric Testing
499-05-093 VLAN Flooding
499-05-106 1000Base-T Ethernet BERT, Throughput, RFC2544
499-05-113 100-FX, 1000Base-X Ethernet BERT, Throughput, RFC2544
499-05-114 Multi Stream Test
499-05-199 Service Level Ethernet OAM, IEEE 802.1ag and ITU-T Y.1731
499-05-200 Link Level Ethernet OAM, IEEE 802.3ah
Z33-00-013 499-05-199 and 499-05-200 bundle

Additional Options

(via USB or 10/100Base-T Management Ports)

499-05-003 Remote Control
499-05-175 USB Bluetooth Dialing and File Transfer Support (USB Bluetooth adaptor not included)
Z88-00-001G WiFi Wiz, incl. USB WiFi Adaptor

(via 10/100/1000Base-T or 100-FX/1000Base-X Ports)

499-05-001 Web Browser (requires Advanced IP option)
499-05-002 NetWiz
499-05-095 VoIP G.723 Codec
499-05-096 VoIP G.729 Codec
499-05-102 VoIP Check
Z33-00-001 VoIP Expert, incl. VoIP Check option
Z88-00-001P VoIP Call Expert, incl. VoIP USB Adaptor & Earpiece
Z88-00-005G Advanced IP, incl. Ethernet Cable

1000Base-X and 100FX SFP Transceiver Options

301-01-001G 850 nm SX (550m) SFP - 1GE
301-01-002G 1310 nm LX (10km) SFP - 1GE
301-01-003G 1550 nm ZX (90km) SFP - 1GE
301-01-013G 1310 nm 100FX MM (2km) SFP - 100 Mbps
301-01-014G 1310 nm 100FX SM (15km) SFP - 100 Mbps

Recommended Accessories

A02-00-001G Car Adaptor
C02-00-008G Carrying Pouch for V100 w/GPS Data Card
D09-00-010 MX100e+ Test Report
F05-00-001G LC-LC-M Patch Cord
F05-00-002G LC-LC-S Patch Cord
F05-00-003G LC-SC-M Patch Cord
F05-00-004G LC-SC-S Patch Cord
Z77-00-006G LCD Protective Film (pack of 5)
Z99-00-007G USB Bluetooth Adaptor (requires 499-05-175)

Replacement Items

403-99-011G RJ45 Dust Plug
403-99-017G SFP Dust Plug
405-02-001G Screen Protector
405-02-002G Top Connector Cover
A01-00-001G V100 AC Adaptor
A01-00-002G AC Adaptor (3-prong adaptor) for Metal Box
B02-03-002G Battery Pack for V100
B02-06-002G Extended Battery Pack for V100
C01-00-001G V100 Carrying Case
C03-00-001G V100 Shoulder Strap
E01-00-004G USB Memory Stick, 4GB (Kingston)
F02-00-001G Ethernet Cable RJ45 to RJ45 2 m
F04-00-001G Power Cord - US 2 m (6 ft)
F04-00-002G Power Cord - EU 2 m (6 ft)
F04-00-003G Power Cord - UK 2 m (6 ft)
F04-00-007G Power Cord - AU 2 m (6 ft)
F04-00-008G Power Cord - US 2 m (6 ft) with PSE
Z77-00-001G V100/V300 Stylus with String (Pack of 5)
Z77-00-024G Top Connector Cover Hinge (Pack of 5)
Z99-99-001G WIFI USB Adaptor w/ CD Driver (for IP connection only)
Z99-99-001P VoIP USB Audio Adapter
Z99-99-002G SFP Container
Z99-99-020G Over-the-Head Headset (2.5 mm Type)

Recommended Accessories

A02-00-001G Car Adaptor
C02-00-008G Carrying Pouch for V100 w/GPS Data Card
D09-00-010 MX100e+ Test Report
F05-00-001G LC-LC-M Patch Cord
F05-00-002G LC-LC-S Patch Cord
F05-00-003G LC-SC-M Patch Cord
F05-00-004G LC-SC-S Patch Cord
Z77-00-006G LCD Protective Film (pack of 5)
Z99-00-007G USB Bluetooth Adaptor (requires 499-05-175)

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403-99-017G SFP Dust Plug
405-02-001G Screen Protector
405-02-002G Top Connector Cover
A01-00-001G V100 AC Adaptor
A01-00-002G AC Adaptor (3-prong adaptor) for Metal Box
B02-03-002G Battery Pack for V100
B02-06-002G Extended Battery Pack for V100
C01-00-001G V100 Carrying Case
C03-00-001G V100 Shoulder Strap
E01-00-004G USB Memory Stick, 4GB (Kingston)
F02-00-001G Ethernet Cable RJ45 to RJ45 2 m
F04-00-001G Power Cord - US 2 m (6 ft)
F04-00-002G Power Cord - EU 2 m (6 ft)
F04-00-003G Power Cord - UK 2 m (6 ft)
F04-00-007G Power Cord - AU 2 m (6 ft)
F04-00-008G Power Cord - US 2 m (6 ft) with PSE
Z77-00-001G V100/V300 Stylus with String (Pack of 5)
Z77-00-024G Top Connector Cover Hinge (Pack of 5)
Z99-99-001G WIFI USB Adaptor w/ CD Driver (for IP connection only)
Z99-99-001P VoIP USB Audio Adapter
Z99-99-002G SFP Container
Z99-99-020G Over-the-Head Headset (2.5 mm Type)